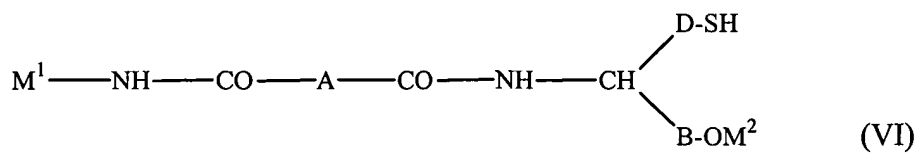


## AMENDMENTS TO THE CLAIMS

1-35 (Cancelled)

36. (Currently Amended, Withdrawn) A method of linking a first molecule  $M^1-NH_2$  with a second molecule  $M^2-OH$  to form a molecule of Formula (VI),



wherein

$M^1$  is the residue of a molecule bearing an amino group or a peptide residue;

**M<sup>2</sup>** is the residue of a molecule bearing a hydroxy group;

A is an alkylene group or an arylene group;

B is a linker or X-J

wherein

X is the residue of a functional group capable of reacting with a hydroxy group;

J is an alkylene or an arylene group; and

D is a C<sub>1-4</sub> alkylene group or a C<sub>3-12</sub> arylene group;

which method comprises reacting a compound of formula (I)



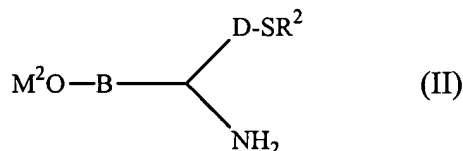
wherein

~~M<sup>1</sup> is the residue of a molecule bearing an amino group;~~

~~A is an alkylene or arylene group; and~~

R<sup>1</sup> is alkyl or aryl;

with a compound of formula (II)



wherein

~~M<sup>2</sup> is the residue of a molecule bearing a hydroxy group~~

~~B is a linker;~~

~~D is a C<sub>1-4</sub> alkylene group or C<sub>3-12</sub> arylene group; and~~

R<sup>2</sup> is hydrogen or a thiol protecting group.

37. (Withdrawn) A chemical compound of formula (I):



wherein

**M<sup>1</sup>** is the residue of a molecule bearing an amino group

A is an alkylene group or an arylene group; and

R<sup>1</sup> is selected from the group consisting of alkyl and aryl.

38. (Withdrawn) The chemical compound according to claim 37 wherein M<sup>1</sup> comprises a peptide residue.

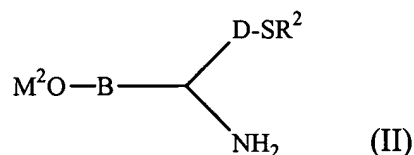
39. (Withdrawn) The chemical compound according to claim 37 wherein A comprises a C<sub>1-4</sub> alkylene group.

40. (Withdrawn) The chemical compound according to claim 38 wherein A comprises an ethylene (-CH<sub>2</sub>-CH<sub>2</sub>-) or n-propylene (-CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-) group.

41. (Withdrawn) The chemical compound according to claim 37 wherein R<sup>1</sup> comprises a C<sub>1-18</sub> alkyl or C<sub>3-10</sub> aryl group.

42. (Withdrawn) The chemical compound according to claim 41 wherein R<sup>1</sup> is selected from the group consisting of t-butyl, substituted or unsubstituted benzyl, substituted or unsubstituted phenyl, 2-pyridyl, 4-pyridyl, cyanomethyl, carboxamidomethyl, 2-carboxamidoethyl and trifluoroethyl.

43. (Withdrawn) A chemical compound of formula (II):



wherein

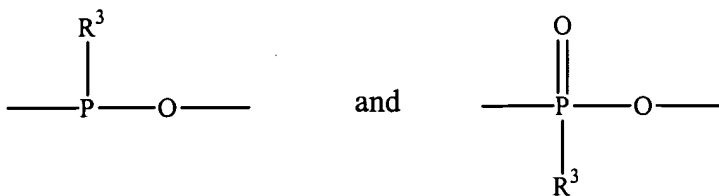
$M^2$  is the residue of a molecule bearing a hydroxy group;

B is a linker;

D is a C<sub>1-4</sub> alkylene group or C<sub>3-12</sub> arylene group; and

R<sup>2</sup> is hydrogen or a thiol protecting group.

44. (Withdrawn) The chemical compound according to claim 43 wherein M<sup>2</sup> comprises an oligonucleotide residue.
45. (Withdrawn) The chemical compound according to claim 43 wherein the linker B comprises a group of the formula
- X-J-
- wherein
- J is an alkylene or arylene group, and
- X is the residue of a functional group capable of reacting with a hydroxy group.
46. (Withdrawn) The chemical compound according to claim 45 wherein J is a C<sub>1-18</sub> alkylene group or C<sub>3-12</sub> arylene group.
47. (Withdrawn) The chemical compound according to claim 46 wherein J comprises a moiety derived from trans-4-aminocyclohexanol or 4-hydroxypiperidine.
48. (Withdrawn) The chemical compound according to claim 45 wherein X is a phosphate, thiophosphate, phosphonate or phosphite residue.
49. (Withdrawn) The chemical compound according to claim 48 wherein X comprises a group selected from

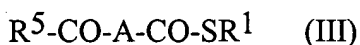


wherein

R<sup>3</sup> is selected from the group consisting of hydroxy, oxy anion and salts thereof, alkyl, alkoxy, aryloxy, thiol, thioxy anion and salts thereof, S-alkyl, S-aryl, N-azolyl and a dialkyl amino group.

50. (Withdrawn) The chemical compound according to claim 49 wherein  $R^3$  is a 2-cyanoethoxy group.
51. (Withdrawn) The chemical compound according to claim 43 wherein D is a methylene or ethylene group.
52. (Withdrawn) The chemical compound according to claim 43 wherein  $R^2$  is selected from the group consisting of hydrogen, alkyl, S-alkylsulfenyl, S-arylsulfenyl, alkylcarboxamidoalkyl, urethanyl and acyl groups.
53. (Withdrawn) The chemical compound according to claim 52 wherein  $R^2$  is hydrogen, tert-butyl, sulfenyl or trityl.
54. (Withdrawn) The chemical compound according to claim 43 wherein the amino group of the compound of formula II is protected.
55. (Withdrawn) The chemical compound according to claim 54 wherein the amino group is protected with a protecting group,  $R^4$ , wherein  $R^4$  is selected from the group consisting of urethanyl, alkyl, alkylsulfenyl, aryl sulfenyl and sulfonyl protecting groups.

56. (Withdrawn) The chemical compound of the formula (III)



wherein

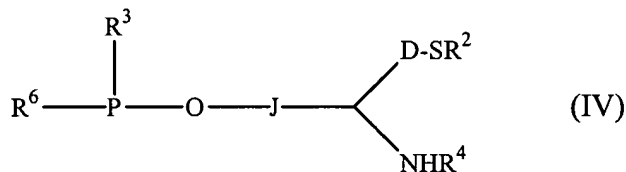
A is an alkylene group or an arylene group;

R<sup>1</sup> is alkyl or aryl; and

R<sup>5</sup> is selected from hydroxy, oxy anion and salts thereof, alkoxy, aryloxy, pentafluorophenoxy, N-succinimidyl, N-(norbornenedicarboximido)oxy, N-benzotriazolyl, N-(1,2-dihydro-1-oxo-2,3,4-benzotriazin-2-yl)oxy, halogen and N-azolyl groups; or together with the adjacent CO group forms an anhydride.

57. (Withdrawn) The chemical compound according to claim 56 wherein R<sup>5</sup> is a pentafluorophenoxy group.

58. (Withdrawn) The chemical compound of the formula (IV)



wherein

D is a C<sub>1-4</sub> alkylene group or a C<sub>3-12</sub> arylene group;

J is an alkylene group or an arylene group;

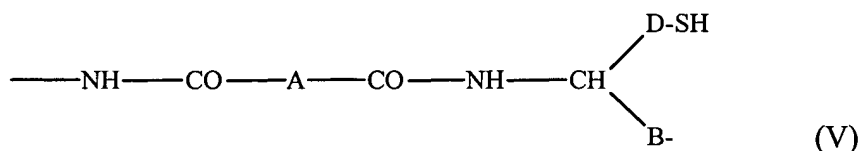
R<sup>2</sup> is hydrogen or a thiol protecting group;

R<sup>3</sup> is selected from the group consisting of hydroxy, oxy anion and salts thereof, alkyl, alkoxy, aryloxy, thiol, thioxy anion and salts thereof, S-alkyl, S-aryl, N-azolyl, and a dialkylamino group.

R<sup>4</sup> is selected from the group consisting of urethanyl, alkyl, alkylsulfenyl, aryl sulfenyl and sulfonyl; and

R<sup>6</sup> is selected from the group consisting of dialkylamino, imino, halogen N-azolyl, alkoxy, aryloxy, alkylthio, and arylthioaryl groups.

59. (Cancelled) The chemical compound according to claim 58 wherein R<sup>6</sup> is a dialkylamino group.
60. (Cancelled) The chemical compound according to claim 58 wherein R<sup>6</sup> is a diisopropylamino group.
61. (Withdrawn) The chemical compound comprising a structural unit of formula (V)



wherein

A is an alkylene group or an arylene group;

B is a linker or X-J

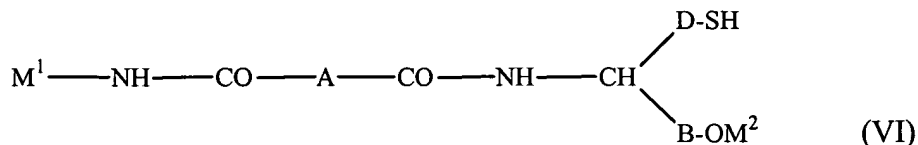
wherein

X is the residue of a functional group capable of reacting with a hydroxy group;

J is an alkylene or arylene group; and

D is a C<sub>1-4</sub> alkylene group or a C<sub>3-12</sub> arylene group.

62. (Currently Amended) The A chemical compound according to claim 61 of the formula (VI)



wherein

M<sup>1</sup> is the residue of a molecule bearing an amino group or a peptide residue;

M<sup>2</sup> is the residue of a molecule bearing a hydroxy group;

A is an alkylene group or an arylene group;

B is a linker or X-J

wherein

X is the residue of a functional group capable of reacting with a hydroxy group;

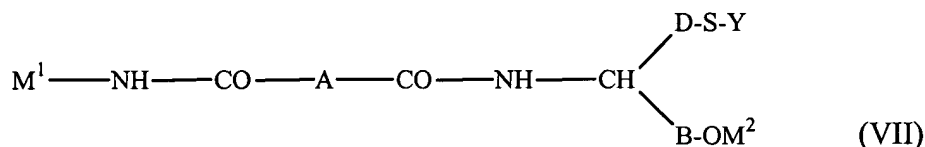


unsubstituted phenyl, 2-pyridyl, 4-pyridyl, cyanomethyl carboxamidomethyl, 2-carboxamidoethyl and trifluoroethyl.

71. (Withdrawn) A method according to claim 36 wherein R<sup>2</sup> is hydrogen or a thiol protecting group.

72. (Withdrawn) A method according to claim 36 wherein R<sup>2</sup> is selected from the group consisting of hydrogen, alkyl, S-alkylsulfenyl, S-arylsulfenyl, alkylcarboxamidoalkyl, urethanyl and acyl groups.

73. (Withdrawn) The chemical compound of the formula (VII)



wherein

M<sup>1</sup> is the residue of a molecule bearing an amino group or a peptide residue;

M<sup>2</sup> is the residue of a molecule bearing a hydroxy group or an oligonucleotide residue:

A is an alkylene group or an arylene group;

B is a linker or X-J

wherein

X is the residue of a functional group capable of reacting with a hydroxy group;

J is an alkylene or an arylene group;

D is selected from the group consisting of a C<sub>1-4</sub> alkylene group and a C<sub>3-12</sub> arylene group; and

Y is a labelling, reporter or effector group.

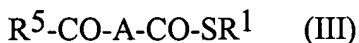
74. (Withdrawn) A method of linking a peptide and an oligonucleotide, which method comprises reacting the peptide and the oligonucleotide with a compound of claim 37, 43, 56, 58 or 61.



75. (Withdrawn) A method of producing a compound of formula (I), comprising reacting a compound of the formula



with a chemical compound of the formula (III)



wherein

M<sup>1</sup> is the residue of a molecule bearing an amino group or a peptide residue;

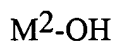
A is an alkylene group or an arylene group;

R<sup>1</sup> is alkyl or aryl; and

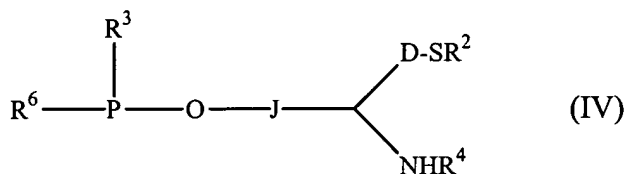
R<sup>5</sup> is selected from the group consisting of hydroxy, oxy anion and salts thereof, alkoxy, aryloxy, pentafluorophenoxy, N-succinimidyl, N-(norbornenedicarboximido)oxy, N-benzothiapolyloxy, N-(1,2-dihydro-1-oxo-2,3,4-benzotriazin-z-yl) oxy, halogen or N-azoly.

76. (Cancelled) The method of claim 75, wherein R<sup>5</sup> is a pentafluorophenoxy group.

77. (Withdrawn) A method of producing a compound of formula II, comprising reacting a compound of the formula



with a chemical compound of the formula (IV)



wherein

$M^2$  is the residue of a molecule bearing a hydroxy group;

D is a C<sub>1-4</sub> alkylene group or a C<sub>3-12</sub> arylene group;

J is an alkylene group or an arylene group;

R<sup>2</sup> is selected from the group consisting of hydrogen and a thiol protecting group;





